

ABSTRACT

This invention is a method and system for determining whether the engine should be running in a Hybrid Electric Vehicle during vehicle idle conditions. Specifically, a controller determines if the vehicle is in idle and if engine operation is necessary. To determine whether engine operation is necessary, the controller determines whether the battery needs charging, whether vacuum needs to be replaced in the climate control system or brake system reservoir, whether the vapor canister requires purging, whether the adaptive fuel tables require fast adapting, whether the engine or catalyst temperatures are unacceptable, or whether the air conditioning has been requested. Once the controller determines that the engine must be running, the controller determines in which control mode to run the engine, either speed control mode (using powertrain controllers) or torque control mode (using a generator and generator controller). Finally, the controller optimizes engine running conditions, to the extent possible depending upon the control mode, to perform any necessary functions during vehicle idle.